

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (currently amended): A method for provisioning services to packets sourced
2 from a number of client devices, ~~each of the packets having at least a part of a layer 2~~
3 ~~header replaced with a unique bit string that is independent of the contents of the received~~
4 ~~packets~~, the method comprising:

5 a) accepting a packet sourced from one of the number of client devices, wherein p19
6 the packet has had at least a part of a layer 2 header replaced with a unique bit
7 string that is independent of any contents of the packet;

8 ba) determining whether or not the packet is entitled to access a particular service
9 using at least a portion of the unique bit string; and

10 cb) if it is determined that the packet is entitled to access the particular service,
11 then routing the packet.

1 Claim 2 (original): The method of claim 1 wherein at least a portion of the unique bit
2 string represents one of a number of logical interfaces.

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1 Claim 3 (previously presented): The method of claim 1 wherein at least a portion of the
2 unique bit string corresponds to a virtual private network-organizational universal
3 identifier.

1 Claim 4 (previously presented): The method of claim 1 wherein at least a portion of the
2 unique bit string corresponds to a virtual private network-INDEX.

1 Claim 5 (currently amended): A method for providing various quality of service levels to
2 packets sourced from a number of client devices, ~~each of the packets having at least a~~
3 ~~part of a layer 2 header replaced with a unique bit string that is independent of the~~
4 ~~contents of the packets~~, the method comprising:

- 5 a) accepting a packet sourced from one of the number of client devices, wherein
6 the packet has had at least a part of a layer 2 header replaced with a unique bit
7 string that is independent of any contents of the packet;
8 ba) determining a service level to which the packet is entitled using at least a
9 portion of the unique bit string⁽¹⁾; and
10 cb) forwarding the packet to a particular one of a plurality of queues
11 associated with the service level determined.

1 Claim 6 (original): The method of claim 5 wherein at least a portion of the unique bit
2 string represents one of a number of logical interfaces.

1 Claim 7 (previously presented): The method of claim 5 wherein at least a portion of the
2 unique bit string corresponds to a virtual private network-organizational universal
3 identifier.

1 Claim 8 (previously presented): The method of claim 5 wherein at least a portion of the
2 unique bit string corresponds to a virtual private network-INDEX.

1 Claim 9 (previously presented): A method for monitoring packets sourced from a group
2 of client devices defining a subset of client devices, each of the packets having at least a
3 part of a layer 2 header replaced with a unique bit string, the method comprising:

4 a) determining whether or not the packet belongs to the group of client devices
5 → (using at least a portion of at least one of the unique bit string⁽¹⁾ and

6 → b) if it is determined that the packet does belong to the group of client devices,
7 then [✓] BT

- 8 i) copying the packet to generate a duplicate packet, and
9 ii) forwarding the duplicate packet to a monitoring facility, wherein the
10 monitoring facility monitors at least one of (A) service provided to a group
11 of customers and (B) security.

1 Claim 10 (original): The method of claim 9 wherein at least a portion of the unique bit
2 string represents one of a number of logical interfaces.

1 Claim 11 (previously presented): The method of claim 9 wherein at least a portion of the
2 unique bit string corresponds to a virtual private network-organizational universal
3 identifier.

1 Claim 12 (previously presented): The method of claim 9 wherein at least a portion of the
2 unique bit string corresponds to a virtual private network-INDEX.

1 Claim 13 (previously presented): An apparatus for provisioning services to packets
2 sourced from a number of client devices, each of the packets having at least a part of a
3 layer 2 header replaced with a unique bit string, the apparatus comprising:

- 4 a) an access control list; and
5 b) an access controller, the access controller including
6 i) means for determining whether or not the packet is entitled to access a
7 particular service using
8 A) contents of the access control list, and
9 B) at least a portion of the unique bit string, and
10 ii) means for routing the packet if it is determined that the packet is
11 entitled to access the particular service.

1 Claim 14 (previously presented): An apparatus for providing various service levels to
2 packets sourced from a number of client devices, each of the packets having at least a
3 part of a layer 2 header replaced with a unique bit string that is independent of contents of
4 the packets, the apparatus comprising:

- 5 a) a plurality of queues, each of the plurality of queues associated with a
6 particular service level;
7 b) a service level list; and
8 c) a service level controller, the service level controller including

- 9 i) means for determining a service level to which the packet is entitled
10 using
11 A) contents of the service level list, and
12 B) at least a portion of the unique bit string, and
13 ii) means for forwarding the packet to the one of the plurality of queues
14 associated with the quality of service level determined.

1 Claim 15 (previously presented): An apparatus for monitoring packets sourced from a
2 group of client devices defining a subset of client devices, each of the packets having at
3 least a part of a layer 2 header replaced with a unique bit string, the apparatus
4 comprising:

- 5 a) a monitoring port for accepting packets of the group of client devices to be
6 monitored;
7 b) means determining whether or not an accepted packet belongs to the group of
8 client devices using at least a portion of the unique bit string, and
9 c) means for
10 i) copying the accepted packet to generate a duplicate packet, and
11 ii) forwarding the duplicate packet to the monitoring port so that at least
12 one of (A) service to a group of customers and (B) security, may be
13 monitored, if it is determined that the packet was sourced by a client
14 device belonging to the group of client devices.

1 Claim 16 (previously presented): The method of claim 1 wherein the layer 2 header is an
2 Ethernet header, wherein when the unique bit string replaces the at least a part of the
3 layer 2 header a modified header is generated, and wherein a bit-size of the modified
4 header is the same as that of the Ethernet header.

1 Claim 17 (previously presented): The method of claim 1 wherein at least a portion of the
2 unique bit string represents a logical port identifier including a geographic location
3 identifier and a physical unit identifier.

1 Claim 18 (previously presented): The method of claim 5 wherein the layer 2 header is an
2 Ethernet header, wherein when the unique bit string replaces the at least a part of the
3 layer 2 header a modified header is generated, and wherein a bit-size of the modified
4 header is the same as that of the Ethernet header.

1 Claim 19 (previously presented): The method of claim 5 wherein at least a portion of the
2 unique bit string represents a logical port identifier including a geographic location
3 identifier and a physical unit identifier.

1 Claim 20 (previously presented): The method of claim 9 wherein the unique bit string is
2 independent of a layer 2 destination address.

1 Claim 21 (previously presented): The method of claim 9 wherein the layer 2 header is an
2 Ethernet header, wherein when the unique bit string replaces the at least a part of the
3 layer 2 header a modified header is generated, and wherein a bit-size of the modified
4 header is the same as that of the Ethernet header.

1 Claim 22 (previously presented): The method of claim 9 wherein at least a portion of the
2 unique bit string represents a logical port identifier including a geographic location
3 identifier and a physical unit identifier.

1 Claim 23 (previously presented): The method of claim 13 wherein the unique bit string is
2 independent of a layer 2 destination address.

1 Claim 24 (previously presented): The method of claim 13 wherein the layer 2 header is
2 an Ethernet header, wherein when the unique bit string replaces the at least a part of the
3 layer 2 header a modified header is generated, and wherein a bit-size of the modified
4 header is the same as that of the Ethernet header.

1 Claim 25 (previously presented): The method of claim 13 wherein at least a portion of
2 the unique bit string represents a logical port identifier including a geographic location
3 identifier and a physical unit identifier.

1 Claim 26 (previously presented): The method of claim 14 wherein the layer 2 header is
2 an Ethernet header, wherein when the unique bit string replaces the at least a part of the
3 layer 2 header a modified header is generated, and wherein a bit-size of the modified
4 header is the same as that of the Ethernet header.

1 Claim 27 (previously presented): The method of claim 14 wherein at least a portion of
2 the unique bit string represents a logical port identifier including a geographic location
3 identifier and a physical unit identifier.

1 Claim 28 (previously presented): The method of claim 15 wherein the unique bit string is
2 independent of a layer 2 destination address.

1 Claim 29 (previously presented): The method of claim 15 wherein the layer 2 header is
2 an Ethernet header, wherein when the unique bit string replaces the at least a part of the
3 layer 2 header a modified header is generated, and wherein a bit-size of the modified
4 header is the same as that of the Ethernet header.

1 Claim 30 (previously presented): The method of claim 15 wherein at least a portion of
2 the unique bit string represents a logical port identifier including a geographic location
3 identifier and a physical unit identifier.

1 Claim 31 (previously presented): The method of claim 1 wherein the step of determining
2 whether or not the packet is entitled to access a particular service using at least a portion
3 of the unique bit string is a separate determination from determining whether or not the
4 packet can be forwarded.

1 Claim 32 (previously presented): The method of claim 1 wherein the packet is routed
2 only if it is determined that the packet is entitled to access the particular service.

1 Claim 33 (previously presented): The method of claim 5 wherein the service level is a
2 quality of service level.

1 Claim 34 (previously presented): The method of claim 5 wherein the service level is a
2 quality of service level represented by a plurality of bits.

1 Claim 35 (new): A method for provisioning services to packets sourced from a number
2 of client devices, the method comprising:

- 3 a) accepting a packet sourced from one of the number of client devices;
4 b) replacing at least a part of a layer 2 header of the packet with a unique bit
5 string that is independent of any contents of the packet;
6 c) determining whether or not the packet is entitled to access a particular service
7 using at least a portion of the unique bit string; and
8 d) if it is determined that the packet is entitled to access the particular service,
9 then routing the packet.

1 Claim 36 (new): A method for providing various quality of service levels to packets
2 sourced from a number of client devices, the method comprising:

- 3 a) accepting a packet sourced from one of the number of client devices;
4 b) replacing at least a part of a layer 2 header of the packet with a unique bit
5 string that is independent of any contents of the packet;
6 c) determining a service level to which the packet is entitled using at least a
7 portion of the unique bit string; and
8 d) forwarding the packet to a queue associated with the service level determined.

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